APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,775	06/05/2000	Gil Vinitzky	P-2596-US	7937

			EXAMINER
27130	7590	02/06/2004	DO, CHAT C

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ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/586,775	Applicant(s) VINITZKY, GIL
	Examiner Chat C. Do	Art Unit 2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *20 November 2003*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-8* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-8* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   This communication is responsive to Amendment B, filed 1/6/2004.

2.   Claims 1-8 are pending in this application. Claims 1, 3, and 5-8 are independent claims.

In Amendment B, claims 3-6 are amended and claims 7-8 are newly added. This action is made

final.

Claim Objections

3.   Claims 3-5 and 7-8 are objected to because of the following informalities:

        These claims recite a method comprising several steps, but they do not disclose

    the use of the method in the preamble for clarification.

    Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

    The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
    subject matter which the applicant regards as his invention.

5.   Claims 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

        Re claim 7, the limitation "the sum" in line 4 lacks an antecedence basis. For

    examination purposes, the examiner considers this limitation as "a sum". Claim 8 has the

    same problem.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hacke et al. (U.S.

3,673,399).

Re claim 7, Hancke et al. further disclose a method comprising determining a

parity of memory index, wherein a first data point of a pair of input data points of a stage

of a FFT calculation is stored in a first memory space at a first/second address that is the

sum of a first/second based address and memory index that a first/second address (0000;

0001; 0010...) is a sum of a base address (0000 as first address) and memory index (-1, -

2, -3....) in table IV in col. 10, if parity is of a first/second parity value, storing a

first/second output data point of stage at first/second address in fist memory space and a

second output data point of stage at second/first address in second memory space (table II

in col. 4).

Re claim 8, it has the limitations cited in claim 7. Thus, claim 8 is also rejected

under the same rationale in the rejection of rejected claim 7.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   Claims 1-6 are rejected under 35 U.S.C. 103(a) as being obvious over Hancke et al. (U.S.

3,673,399) in view of Avellar et al. (U.S. 3,971,577).

Re claim 1, Hancke et al. disclose in Figures 1 and 9 a method for in-place (col. 1

lines 35-40) memory management in a DSP architecture performing a Fast Fourier

Transformation upon a sequence of N data points (N = 32 in Figure 9) and the sequence

numbered from 0 to N-1. The method comprises storing each of data points (after first

pass) numbered from 0 to (N/2)-1 in a first memory space X (24) and each of data points

numbered N/2 to N-1 in a second memory space Y (25); for each FFT stage 0 (Pass 2 in

Figure 9) data point grouping (0&16, 1&17, 2&18,...,15&31) comprising a first data

point of data points in first memory space X (0, 1, 2,...,15) and a corresponding second

data point of data points in second memory space Y (16, 17, 18, 31); determining the

parity of a data point memory index (col. 5 lines 10-18) corresponding to first and second

data points; storing (Table II in col. 4), if parity is of a first parity value (Memory

Location is even), the results of an FFT operation upon first data point at the memory

address in first memory space X front which first data point was fetched and the result

of an FFT operation upon second data point at the memory address in second memory

space Y from which second data point was fetched (PO0 in 24 & PO1 in 25; OP6 in 24

& OP7 in 25 ...); and storing (Table II in col. 4), if parity is of a second parity value (Memory Location is odd), the results of an FFT operation upon first data point at the memory address in second memory space Y from which second data point was fetched and the result of an FFT operation upon second data point at the memory address in first memory space X from which first data point was fetched (data results are swapped while storing such as OP3 in 24 & OP4 in 25, OP5 in 24 & OP6 in 25...). Hancke et al. do not disclose storing each of raw data points in a first memory space X and second memory space Y. The main different between the reference and the present application is the initial stage wherein all the input data points are stored in the first and second memory storage prior the first stage FFT operation in the present application and the input data points are stored temporarily in a third memory storage, passed through first stage of FFT operation, than stored in the first and second memory storage in the reference. However, storing all the input data points in the first and second memory space is conventional method in computing FFT as seen in Figure 1 of Avellar et al.'s invention. Avellar et al. disclose in Figure 1 an operation of FFT wherein the input data points are stored in the first and second memory space prior starting the first stage of FFT operation. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to modify the Hancke et al.'s invention Figure 1 as seen in Avellar et al.'s invention by storing all the input data points directly into the first and second memory spaces (24 and 25) because it would enable to increase the system performance by simultaneously processing the input data points.

Re claim 2, Hancke et al. further disclose any FFT stage Z subsequent to stage 0 and each FFT stage Z data point grouping comprising a first data point in first memory space X and a corresponding second data point in second memory space Y, storing the results of an FFT operation upon first data point at the memory address in first memory space X from which first data point was fetched and the results of an FFT operation upon second data point at the memory address in second memory space Y from which second data point was fetched (col. 6 lines 25-39).

Re claim 3, it has the limitations cited in claim 1. Thus, claim 3 is also rejected under the same rationale in the rejection of rejected claim 1.

Re claim 4, it has the limitations cited in claim 2. Thus, claim 4 is also rejected under the same rationale in the rejection of rejected claim 2.

Re claim 5, it has the limitations cited in claim 1. Thus, claim 5 is also rejected under the same rationale in the rejection of rejected claim 1. In addition, Hancke et al. further disclose the first address and second address both correspond to memory index (table IV in col. 10).

Re claim 6, it is the digital signal processor claim of claim 5. Thus, claim 6 is also rejected under the same rationale in the rejection of rejected claim 5.

Response to Amendment

10.   The amendment filed 1/6/2004 is objected to under 35 U.S.C. 132 because it introduces new·matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new

matter into the disclosure of the invention. The added material which is not supported by the

original disclosure is as follows:

> In claims 7-8, the limitation "the first/second address that is sum of a first/second
>
> base address and memory index" is not supported by the original specification.
>
> Applicant is required to cancel the new matter in the reply to this Office Action.

Response to Arguments

11.   Applicant's arguments with respect to claims 3-6 have been considered but are moot in

view of the new ground(s) of rejection.

12.   Applicant's arguments filed 1/6/2004 have been fully considered for claims 1-2 but they

are not persuasive.

> a.   The applicant argues in page 7 for claim 1 that Hancke et al. fail to disclose the
>
> limitations cited in claim 1, particularly the data points of the first/initial pass is stored in
>
> the processed memory banks prior applying FFT.
>
> The examiner respectfully submits that the previous office action clearly states
>
> that Hancke et al.'s invention lacks the limitation of storing the first/initial data in
>
> a first memory space X and second memory space Y. However in combine with
>
> the secondary reference by Avellar et al., they disclose the lacking feature.

b.   The applicant argues in page 7 that the secondary reference by Avellar et al. fail

to disclose the lacking feature in the primary reference since the output of the first pass is

stored indifferent memories than the input buffers.

The examiner respectfully submits that Avellar et al.'s Figure 1 only discloses

two memory banks (101 and 102) for storing input and output of FFT data.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The

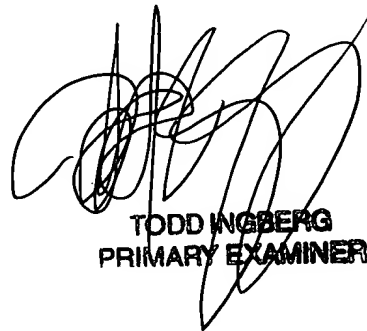examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2124

February 5, 2004

TODD INGBERG
PRIMARY EXAMINER